It is impossible to give an abstract, or even an indication, of the wealth of material contained in this book, which is a landmark in British research in criminology. Dr. East pleads for further research and for the creation of a special penal institution which would be used as a centre for this purpose. There could not be a stronger argument to support his plea than the facts so fully set forth in the 112 tables of this book and in the lucid and well-weighed commentary which accompanies them.

AUBREY LEWIS.

BIOLOGY

Needham, Joseph, F.R.S. *Biochemistry and Morphogenesis.* Cambridge, 1942. University Press. Pp. xvi+787; 35 plates (4 in colour) and numerous illustrations in the text. Price 52s. 6d.

DR. JOSEPH NEEDHAM'S monumental work *Chemical Embryology* was published in 1931. Though the present book brings the older work up to date in many respects, it is by no means just a supplement to it. The author's encyclopædic knowledge of the literature has enabled him to cover an enormous field of experimental biology and biochemistry, to take up threads seemingly far apart and to knit them together into a multi-coloured and absorbingly interesting fabric. In these days of increasing specialization one cannot be too grateful for a synthetic work of this kind, and author and publishers are to be congratulated for its production at the present time.

Geneticists will be particularly interested in Dr. Needham's discussion of genes and organizer phenomena. In this borderline subject between chemistry and morphology great advances in our understanding of gene action and " character " may be anticipated in the future. Indeed, it requires little prophetic foresight to predict that this will be one of the main lines along which genetics, in collaboration with biochemistry, will advance during the next decade, and it is for this reason that geneticists would be well advised to familiarize themselves with Dr. Needham's clear and thoughtful exposition of the subject.

It is, of course, quite unavoidable that a few errors should have found their way into a book of this magnitude and covering so wide a field. In pointing out two or three from his own limited field, the reviewer wants to make it quite clear that these slips are mostly trivial and in no way detract from the value of this work. The gene for " dominant spotting " with anæmia in the mouse was first recognized by Miss Durham in 1908, not by Little (1915), and the hæmoglobin content of the red cells is not normal, but increased, as the cells are larger than normal, though they are greatly reduced in number (p. 378). The gene " hooded-lethal " described by Crew and Kon occurred in the rat, not the mouse (p. 391). The lethal head and jaw anomaly of mice described by Little and Bagg in 1924 is distinct from the gene for myelencephalic blebs obtained by the same authors (p. 372). On p. 366 it is stated that " lethal genes are always harmless in the heterozygous condition." While this is certainly true in the majority of cases, there are some exceptions; for instance, the gene Sd (Danforth's short-tail) in the mouse, which is completely lethal in the homozygous condition (absence of kidneys, etc.), also kills about 70 per cent of the heterozygotes by a less complete reduction of the kidneys; of course such a gene would rapidly die out outside a laboratory.

However, these are but details, which matter little. Dr. Needham's work is a most distinguished contribution to the theory of organic development and deserves a wide circulation.

H. GRÜNEBERG.